Estimates of the high prevalence of neonatal sepsis in low-and middle-income countries; A systemic review and a meta-analysis.

Shivanthi Samarasinghe* and Deborah Akingbemisilu

Leicester School of Allied Health Sciences, De Montfort University, Leicester, LE1 9BH, UK.

Accepted to present at the Global Women's Research Society (GLOW) 2020 GLOW Conference; www.glowconference.org on 10th & 11th September 2020, hosted by the Sanyu Research Unit at the University of Liverpool, and the Centre for Maternal and New-born Health at Liverpool School of Tropical Medicine, UK.

The focus for abstracts is on the Year of the Nurse/Midwife, implementation science and general global women's healthcare.

Abstract

Background: Neonatal sepsis refers to the presence of bacteria in the blood of a new-born baby. Differing estimates of disease burden have been reported from high-income countries compared with reports from low-income and middle-income countries (LMICs), where the highest burden of diseases has been reported. This study has analysed the different estimates to understand the extent of the burden of neonatal sepsis in LMICs.

Method: A systematic review and meta-analysis study method was used. The reviewed studies were accessed through an electronic web-based search strategy. From selected studies, 52 studies met the inclusion criteria.

Results: The average epidemiology of neonatal sepsis in the developed countries is 1.21/1000 (95% CI: 8.39– -5.97) live births compared to the value of 18/1000 (95% CI: 25.18– -10.82) in LMICs. Among the LMICs Liberia resulted in the highest value of 68/1000 (95% CI: 75.18 – 60.82) live births. Bacterial etiological agents, *Klebsiella pneumoniae* (40%), *Escherichia coli* (14%), *Staphylococcus aureus* (13%) accounted for the number of neonatal sepsis respectively. The results identified that the rate of Late-Onset was higher than that of the Early-Onset Sepsis. Both Sub-Saharan Africa and Southern Asian countries have an average neonatal mortality risk of 30/1000 live births, and Nigeria has the highest risk of

36/1000 live births.

Conclusion:

The four different estimates of the prevalence of neonatal sepsis; average epidemiology, etiological agents, rate of EOS vs LOS, and the neonatal mortality risk were found to be high in LMICs. Despite LMICs have established possible prevention and treatment strategies, neonatal sepsis remains a major healthcare challenge in LMICs.

Selection of the applicant, Dr S. Samarasinghe to present the 2020 GLOW conference;
Medical Research Council's commitment to support Global Maternal and Neonatal health, MRC is delighted to be supporting the Global Women's Research Society (GLOW) conference on 10/11th September 2020, and as an applicant for the MRC Global Maternal & Neonatal Health research grant, Dr S. Samarasinghe is invited to present her research in this year 2020 GLOW conference.

Dr Philip Woodgate
Programme Manager for Global Health Challenges
Medical Research Council (MRC)
58 Victoria Embankment
London
EC4Y 0DS